ALASKA
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

FY98 Program Summary

STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS
794 University Avenue, Suite 200
Fairbanks, Alaska 99709-3645
Phone: (907) 451-5010

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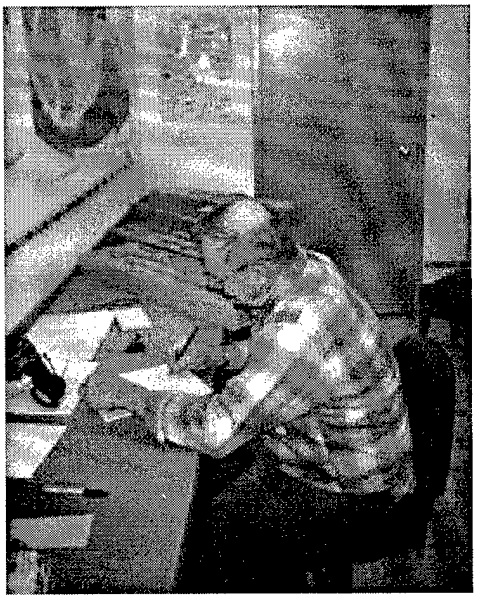
EVOLUTION OF THE DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS (DGGS)

Territorial Department of Mines, 1959
Division of Mines and Minerals, 1959-66
Division of Mines and Geology, 1966-70
Division of Geological Survey, 1970-72
Division of Geological and Geophysical Surveys, 1972-Present



LEADERSHIP

Seven qualified professional geoscientists have served as State Geologist:

Jim Williams, 1959-71
William Fackler, 1971-73
Donald Hartman, 1973-75
Ross G. Schaff, 1975-86
Robert B. Forbes, 1987-1990
Thomas E. Smith, 1991-1995
Milton A. Wiltse (Acting), 1995-Present

The State Geologist also serves as a division director within the Department of Natural Resources (DNR) and is appointed by the DNR Commissioner. Since the early 1970s, the State Geologists have been selected from lists of candidates prepared by the geological community and professional societies within Alaska—similar to the process by which judicial appointees are selected. The qualifications and responsibilities of the State Geologist and the mission of DGGS are defined by statute.

STATUTORY MANDATES

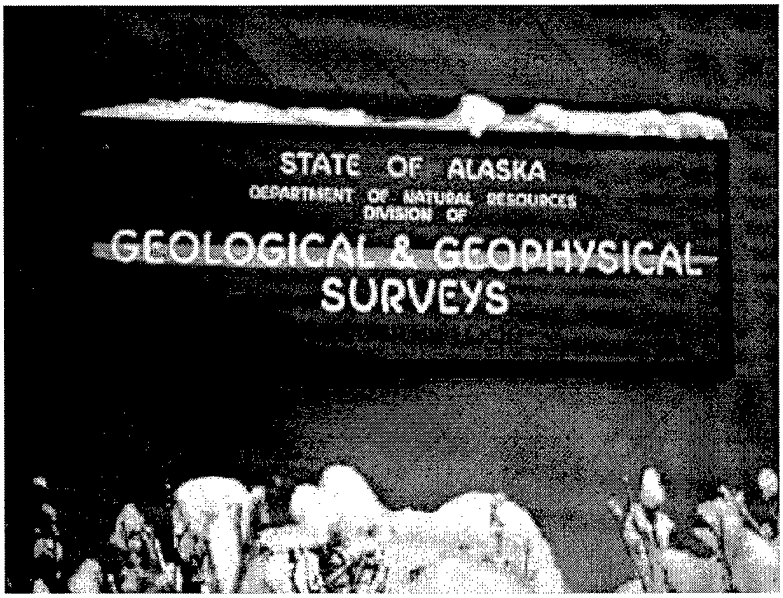
Alaska Statutes Sec. 41.08.010. Division of geological and geophysical surveys. There is established in the Department of Natural Resources a division of geological and geophysical surveys under the direction of the state geologist. (1 ch 93 SLA 1972)

Sec. 41.08.015. State geologist. The commissioner of natural resources shall appoint the state geologist, who must be qualified by education and experience to direct the activities of the division. (1 ch 93 SLA 1972)

Sec. 41.08.020. Powers and duties. (a) The state geologist shall conduct geological and geophysical surveys to determine the potential of Alaskan land for production of metals, minerals, fuels, and geothermal resources; the locations and supplies of groundwater and construction materials; the potential geologic hazards to buildings, roads, bridges and other installations and structures; and shall conduct such other surveys and investigations as will advance knowledge of the geology of Alaska. With the approval of the commissioner, the state geologist may acquire, by gift or purchase, geological and geophysical reports, surveys and similar information.

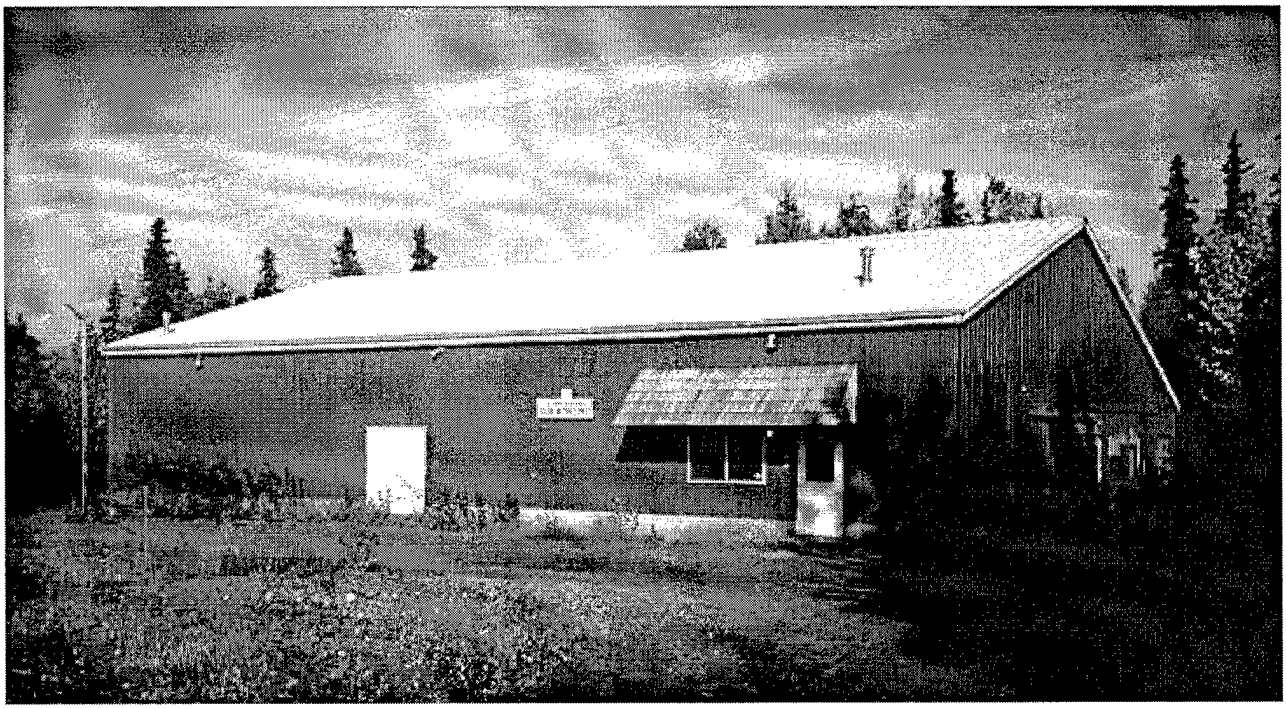
LOCATION

Current DGGS staff strength totals 24 professional and support personnel, plus ten geologic assistants hired through the University of Alaska Fairbanks Research Assistant Program.



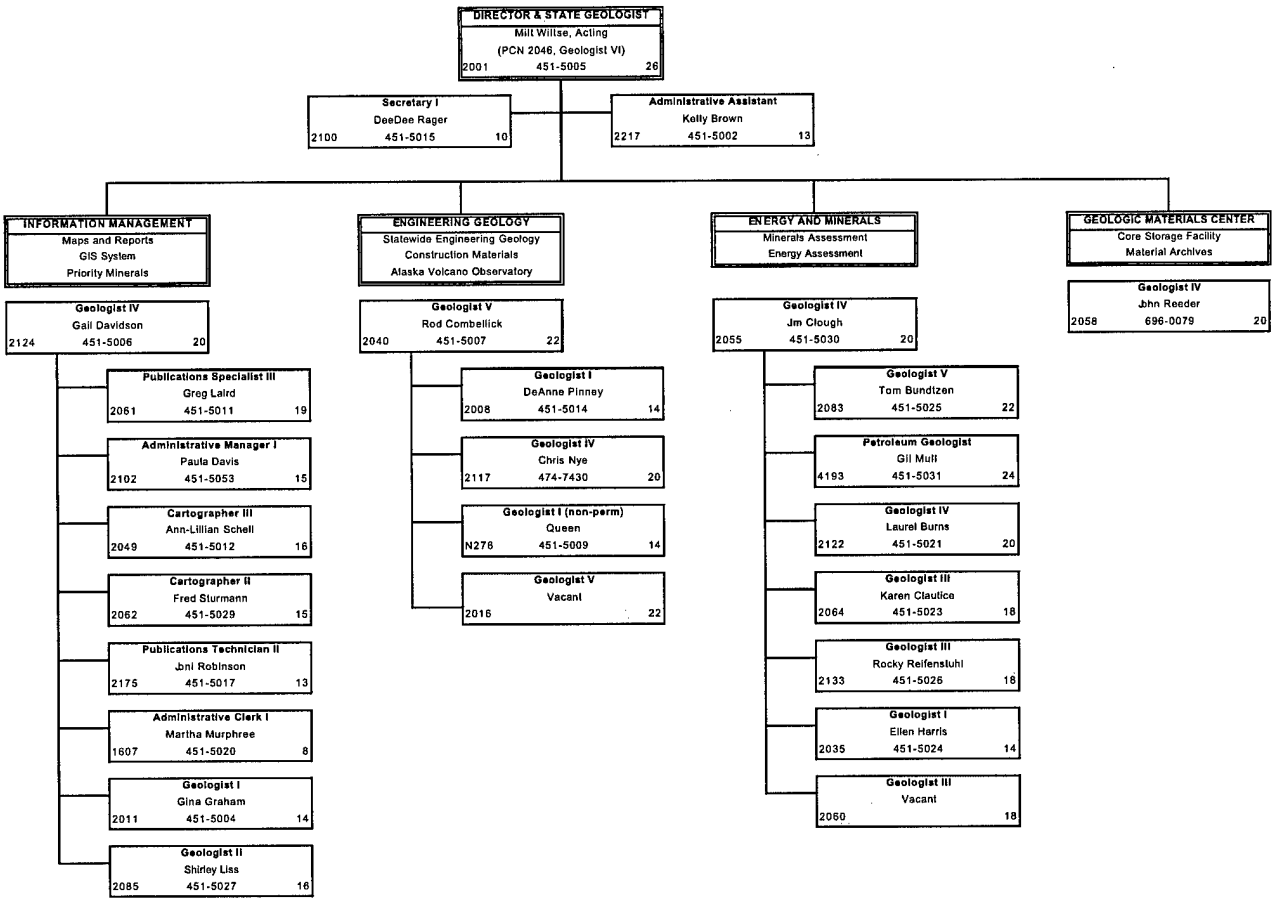
The administrative headquarters were moved to Fairbanks in 1987. The close proximity of the division and the earth science research laboratories of the University of Alaska Fairbanks campus has a strategic benefit to the DGGS program. University staff and students are important adjunct members of many DGGS project teams.

The Eagle River compound comprises the DGGS Geologic Materials Center (GMC). The GMC is a repository for geologic samples of oil- and gas-related well cores and cuttings, mineral deposit core samples, and regional geologic voucher samples. These materials are used by industry to enhance the effectiveness and success of private-sector mineral and energy exploration ventures. New materials are continuously acquired. Use of the materials at the GMC is free to the public. The GMC is staffed by a geologist, who has established a network of volunteers to assist him and ensure continuous public service at the facility.



ORGANIZATION

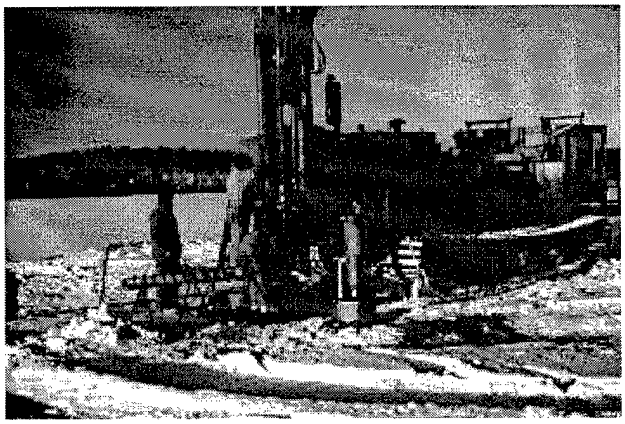
The Division of Geological and Geophysical Surveys is organized into three sections: Statewide Minerals and Energy; Statewide Engineering Geology; and a Geologic Communications section. DGGS also has a Geologic Materials Center that is managed by one full-time professional geologist in Eagle River, Alaska.



The **Division of Geological and Geophysical Surveys (DGGS)** mission is summarized in AS 41.08.020. The division collects, analyzes, interprets, and publishes data on Alaska's geologic resources as a stimulus to private-sector resource development, to facilitate effective management of Alaska's lands, and to mitigate the impact of natural geologic hazards. The division is also charged with the task of advancing the general knowledge of the geologic framework of the state.

The **Mineral and Energy Resources Section** collects, analyzes, and makes available information on the geologic framework of Alaska as it pertains to the mineral and energy resources of the state. Summary maps and reports illustrate the geology of the state's prospective terranes and provide data on the location, quality, and quantity of the state's mineral, coal, and geothermal resources.

The **Geologic Materials Center** is the state's single centralized repository for representative geologic samples of oil- and gas-related well cores and cuttings, mineral deposit core samples, and regional geologic voucher samples. These materials are routinely used by industry to enhance the effectiveness and success of private-sector mineral and energy exploration ventures. New materials are continuously acquired. Access to the materials at the GMC is free to the public. To ensure that the value of the GMC holdings are maintained over time, any new data generated from privately funded analyses of the geologic materials must be donated to the GMC database.



The **Engineering Geology Section** collects, analyzes, and compiles geologic data useful for engineering purposes. Surficial-geologic maps portray the distribution of sediment types and provide information on their engineering properties and usefulness as construction materials. Studies of major geologic hazards like earthquakes, volcanoes, and landslides result in reports outlining potential impacts on susceptible areas and expected frequencies of occurrence.

The **Geologic Communications Section** has the primary responsibility for transferring division-generated geologic information to the public and for maintaining and improving public accessibility to the DGGS geologic information database. Increasing utilization of computer technology is resulting in faster preparation of maps and reports and a wider awareness of Alaska geologic information available at DGGS. The section responds each year to an estimated 2,500 public inquiries about geologic resources in the state of Alaska.

The **Director's Office** provides strategic planning for the division's programs to insure that DGGS is meeting the needs of the public within the guidelines of AS 41.08.020, manages the division's fiscal affairs, and provides personnel and clerical services. The Director acts as a liaison between the division and local, state, federal, and private agencies; seeks out and encourages cooperative geologic programs of value to the state, and advises the Commissioner of the Department of Natural Resources about geologic issues.

INTERAGENCY COOPERATION

Other DNR Divisions

In most years DGGS provides other DNR agencies with routine analyses and reviews of various issues such as hazards evaluations of pending oil lease tracts, geologic assessments of land trades, selections, or relinquishments, mineral potential, construction materials, etc. DGGS works closely with the State Pipeline Coordinators Office (SPCO) when geotechnical information about future access corridors is needed. We have an increasing amount of interaction with the Land Records Information System (LRIS) group in the Division of Support Services as more of our geologic data is compiled and organized in digital format amenable to merging with other land information. The DGGS energy group often works with geologic personnel in the Division of Oil and Gas (DOG) on issues related to rural energy sources and in providing near-surface geologic control for the subsurface oil geology analyses conducted by DOG. DGGS supplies the Division of Forestry (DOF) with information about the mineral resource potential within state forests.

Funding for DNR support work has mostly come from our yearly general fund appropriation. For larger efforts, however, the work is supported by Interagency transfers or Capital Improvement funding which supplements the DGGS general fund appropriation. We are not currently engaged in any major interagency cooperative DNR projects.

In summary, the Geological Survey provides an ongoing geologic consulting service to other DNR divisions and line agencies of state government. Typically these activities occupy from 10 to 15 percent of our total effort. Over the last few year, interagency funding from other DNR divisions has been about one percent of our total budget.

Local Government

Most of the cooperative efforts implemented by DGGS with borough and municipal governments are conducted on a mutually beneficial but informal basis. A notable exception is the cooperative effort being undertaken with the City of Wrangell in FY97. The City of Wrangell is prepared to transfer $200,000 to DGGS to partially pay for the geophysical survey of high potential mineral lands near the city. Wrangell's $200,000 is being matched by $300,000 from the U.S. Bureau of land Management and an in-kind contribution of DGGS expertise to oversee the implementation of geophysical surveys through the use of private-sector contractors.

University of Alaska

DGGS has had a long and productive professional association with the geoscientists and students in various departments of the University of Alaska. University of Alaska faculty work as project team members on many DGGS projects and provide special analytical skills for generating geochemical and radiometric-age data. University student interns also are an important part of the DGGS work force. While working on current DGGS projects, the students learn a wide variety of geology related skills ranging from conventional geologic mapping and sample preparation techniques to modern digital database creation and geographic information systems. DGGS and the University make frequent use of each others libraries and specialized equipment.

Federal Agencies

DGGS has ongoing cooperative programs with the U.S. Geological Survey (USGS) and the U.S. Bureau of Land Management.(BLM) Periodically, DGGS also expects to have cooperative programs with the U.S. Minerals Management Service and the Department of Energy. We have recently initiated a cooperative program with the BLM and the City of Wrangell to geophysically survey about 1000 square miles of high mineral potential terrane near Wrangell, Alaska. The BLM will contribute $300,000 towards this survey which is scheduled for completion in FY97. All BLM funds will flow through to the geophysical contractor. DGGS also receives federal funds in the form of matching grants for which we must compete with other organizations on a yearly basis. In the past we have been successful in securing funds to support mineral inventory mapping, surficial and earthquake hazards-related mapping, volcanic-hazards-related work and studies related to oil and gas potential in Cook Inlet and the North Slope. We are not, however, assured of yearly success for any of our federal grant proposals. These funds, therefore, sometimes complement but do not replace General Fund money.

ALASKA GEOLOGIC MAPPING ADVISORY BOARD

The Alaska Geologic Mapping Advisory Board aids the Division of Geological & Geophysical Surveys in its goal of providing earth science information to the Alaskan public. A number of prominent leaders in the geological community with a variety of backgrounds and a broad spectrum of experience in Alaska have agreed to serve on the advisory board. The purpose of the board is multifold:

- To identify strategic geologic issues that need to be addressed by the State.
- To inquire into matters of community interest relating to Alaska geology.
- To provide a forum for collection and expression of opinions and recommendations relating to geologic investigation and mapping programs for Alaska.
- To make recommendations toward identifying Alaska's diverse resources and promoting an orderly and prudent inventory of those resources.
- To increase public awareness of the importance of geology to the state's economy and to the public's health and safety.
- To promote communication among the general public, other government agencies, private corporations, and other groups that have an interest in the geology and subsurface resources of Alaska.
- To facilitate cooperative agreements between DGGS and other agencies, professional organizations, and private enterprise to develop data repositories and to enhance the state's resource inventory and engineering geology programs, and to communicate with public officials as representatives of groups interested in the acquisition of Alaska geologic information.
- To enlist public support for statewide geologic resource inventories and engineering geology programs.

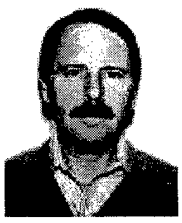
Members of the board are:

Chairman
Mr. Gerald G. (Jerry) Booth
Vice President
Cook Inlet Region, Inc.
2525 C Street, Suite 500
Anchorage, Alaska 99509

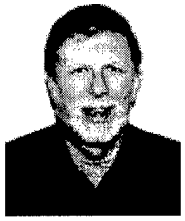
Vice Chairman
Dr. John Sims
Vice President
Usibelli Coal Mine, Inc.
122 1st Avenue, Suite 302
Fairbanks, Alaska 99701

Secretary
Mr. James Rooney
President, R & M Consultants
9101 Vanguard
Anchorage, Alaska 99507

Dr. Carl Benson
Professor Emeritus, Geology
University of Alaska Fairbanks
P.O. Box 757320
Fairbanks, Alaska 99775-7320



Dr. Harold Noyes
Natural Resource Manager
Doyon, Limited
201 1st Avenue
Fairbanks, Alaska 99701



Dr. David Hite
President, Hite Consultants
2250 Woodworth Circle
Anchorage, Alaska 99517

The board held its first meeting in Fairbanks on October 22, 1995, and meets at least three times a year to discuss state needs, review DGGS programs, and provide recommendations to the State Geological Survey. The members solicit and welcome comments and suggestions from the public concerning state needs and DGGS programs.

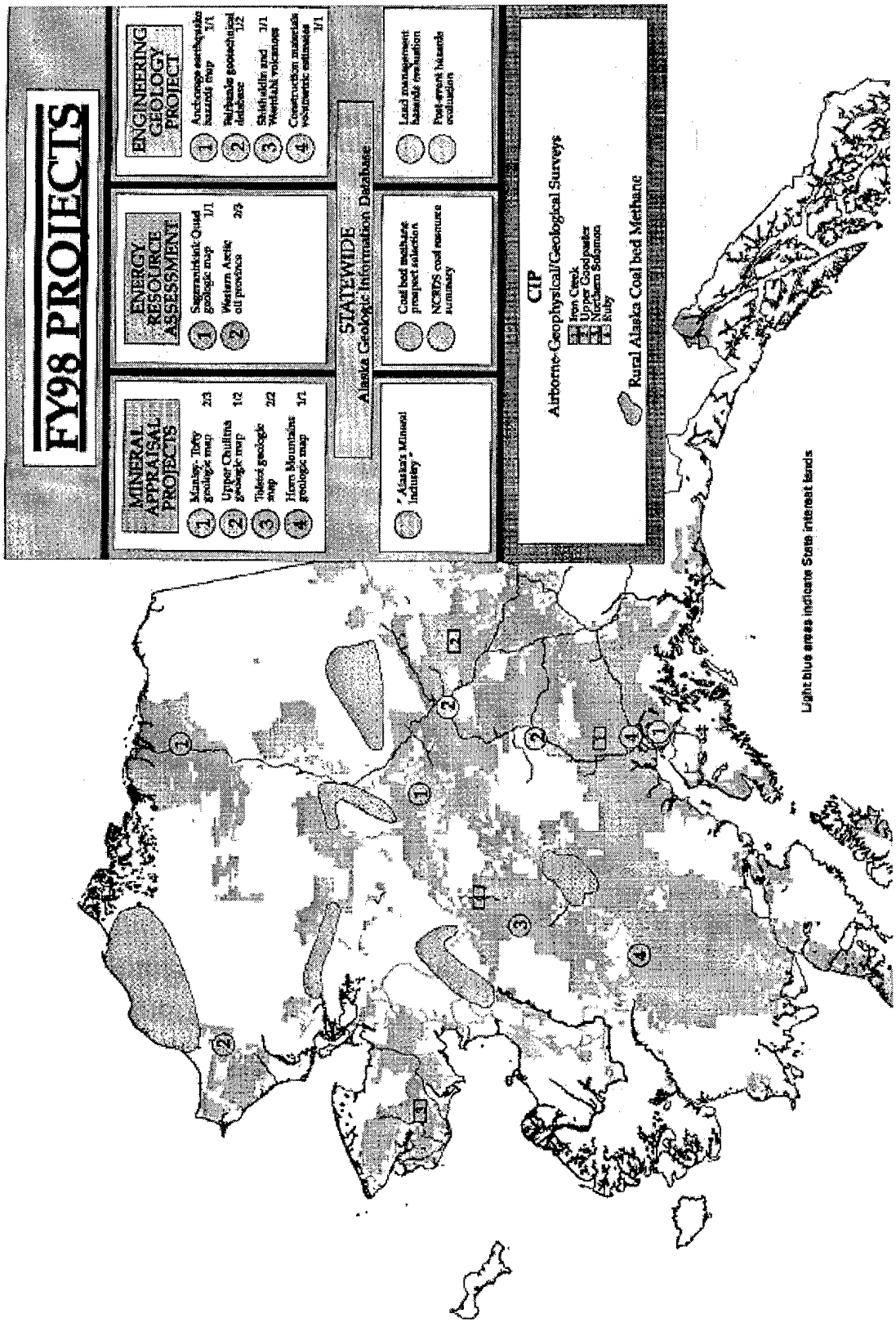
MAJOR ACCOMPLISHMENTS OF FY96

- Prepared and published *Alaska's Mineral Industry 1995,* an annual report on statewide mining activity in cooperation with the DNR Division of Mining and Water Management and Department of Commerce and Economic Development. Circulated both nationally and internationally, *Alaska's Mineral Industry 1994* report helped attract $182 million in mineral exploration and development investments to the state last year.
- Completed and published an updated geologic map of the Fairbanks Mining district utilizing new field mapping, laboratory analyses and aeromagnetic geophysical mapping flown by the state, and new geologic concepts. The goal of this project was to sustain the momentum of mineral sector job creation by continuing to catalyze private-sector investment in mineral exploration and development.
- Geologic field work was completed in the roadless section of the Ophir-Ruby transportation corridor of western Alaska. Detailed mineral investigations and comprehensive geologic mapping concentrated in the Cripple Creek Mountains area, where over 250,000 ounces of past gold production has taken place. A regional geologic appraisal of construction materials for the entire roadless corridor segment complemented the comprehensive geologic mapping efforts in the Cripple mountains.
- Completed a detailed airborne geophysical survey of 700 square miles of the Rampart-Manley mining areas. Nineteen products were published and released to the public in the form of maps and digital data. The new geophysical data will encourage private-sector investment in mineral exploration and development of mineralization in this rural mining district.
- Conducted a new helicopter-supported ground-truth geological survey in the northern Rampart-Manley mining district to complement aeromagnetic geophysical surveys flown by the State in 1995. The new geologic data generated will renew industry interest in this Interior Alaska mining district which historically produced 750,000 ounces of gold and 800,000 pounds of tin, and currently supports some small-scale placer mining.
- Prepared and published an assessment of the hydrocarbon potential of the Lower Kuskokwim River area of the Bethel basin. This study was designed to help predict the natural-gas potential of this portion of the Bethel basin using aeromagnetic data acquired by contract in 1995 and from regional geological expertise of DGGS staff.
- Completed the data acquisition and release for an aeromagnetic survey of a 2,900 square mile area in the lower Yukon River Delta portion of the Bethel basin. Three products were published and released to the public. These data will assist efforts to attempt to identify local sources of natural gas for use by residents in that region.
- Prepared and published three reports on the paleontology, geochemistry, and preliminary oil and gas potential of rock units in the western Brooks Range. These rocks are representative of potential oil sources and reservoirs in the subsurface to the north beneath the Arctic coastal plain. Data acquired in 1996 geologic field surveys indicates that new interpretations of the oil producing potential of the western Arctic Slope are needed.
- Completed and published a database on coal resources of the Alaska Peninsula as part of a cooperative project between DGGS and the U.S. Geological Survey. These data are being entered into the National Coal Resource Data System, a long-term project of the USGS to quantify the nation's coal resources.
- Completed a coal resource assessment of the Colville Mining District. Hypothetical resources of 300 million short tons of potentially mineable sub-bituminous to bituminous coal are estimated to exist within the Colville River watershed which forms the southern and eastern portions of the National Petroleum reserve in Alaska.
- Completed a comprehensive analysis of geologic data related to Quaternary geology, glacial history, and sand-and-gravel deposits of the eastern and northern Cook Inlet region. The results are useful for locating sand-and-gravel resources, modeling aquifers, and determining contaminant pathways.
- Completed a cooperative project with the Washington and Oregon state geological surveys to evaluate liquefaction-related ground failures resulting from the 1964 great Alaska earthquake. Results of this work are useful for assessing earthquake recurrence rates and potential severity of future earthquake-induced ground disturbances in Alaska and the Pacific Northwest.
- Completed reconnaissance evaluation and mapping of surficial geology and construction-materials resources in the northern portion of the Rampart-Manley mining district. The results of this work will be useful for designing the planned road from Eureka to Rampart and for assessing future placer-gold potential in the Rampart area.

- Completed surficial-geologic and construction-materials maps of the Fairbanks mining district. This work forms the basis of what would be an ongoing geologic-materials and geotechnical database for the Fairbanks area.
- At the request of the village of Shishmaref, completed an engineering-geologic map and report on possible relocation of Shishmaref to mitigate damage from storm-wave erosion.
- Initiated a major expansion of volcano-monitoring instrumentation to the eastern Aleutian Islands in response to a federal contract awarded to the Alaska Volcano Observatory. The expanded surveillance of Alaska volcanoes enabled by this expansion helps to ensure the continued safe use of Alaska's two major airports (now ranked No. 1 and No. 7 in national air freight tonnage) by U.S. and international air carriers.
- Initiated a compilation of borehole geotechnical data in the Anchorage area. This geotechnical database will be used to develop improved subsurface geologic models and earthquake-hazards maps of Anchorage and will be a useful public resource for planning future development and construction.
- Completed the Charley River STATEMAP Project. Partially funded by federal money, this project allowed DGGS to investigate a potential alternate corridor into northern Yukon, Canada, that may be needed in the future for pipelines, roads, or power lines.
- Completed publication of the geologic map for the Circle Mining District. This map provides the ground-truth geologic data needed to support the airborne geophysical surveys made in 1993. The combined airborne geophysical and geological maps have resulted in renewed interest and major mining company investments in the historic district.
- Completed compiling a GIS geologic database of the Kandik River area in cooperation with ARCO. These data, generated by ARCO over many years and at a cost of several million dollars, will now be in the public domain where it will be available to stimulate new oil and gas exploration in the future.
- Provided extensive technical information on Alaska's mineral resources at two in-state mining conferences: the Alaska Miners Association Annual Convention & Trade Fair (in Anchorage) November 6-10, 1995, and the 15th Biennial Conference on Alaskan Mining (in Fairbanks) sponsored by the Alaska Miners Association March 5-9, 1996. These presentations help maintain the momentum of private-sector job creation in the mineral industry.
- Prepared an educational geological information display for the Noel Wien Public Library (Fairbanks) in February 1996. This display helped to educate the public on the benefit of developing Alaska's geologic resources and on the use of geologic information to avoid losses due to natural geologic hazards.
- Prepared and staffed an educational display on Alaska's geologic resources for the June 24, 1996 solstice celebration in downtown Fairbanks. The display featured geologic items of interest to the public and was effective in explaining the process of exploring for and identifying geologic resources.
- DGGS sold 7,521 publications during FY96. The general public accounted for 32.2% of the sales, while industry made up 28.3%, universities 5.7%, the federal government 7.3%, state agencies 4.3%, and 22.2% of sales were to distribution centers. A total of 1,619 orders were placed, mostly in person (48.5%) and by mail (31.9%); others were placed by phone, fax, and electronic mail. These publications form the basis for many geologically-centered ventures in Alaska.
- As part of its public outreach efforts, the junior DGGS cartographer presented a lecture on geography in German to the German class at Lathrop High School; made presentations to classes at Pearl Creek Elementary School about geology; lectured at the University of Alaska Fairbanks Museum docent training program about types of maps and their uses; and made a presentation to the University of Alaska Fairbanks computer-geology class about the uses of computer drafting and computer graphics in geology.
- As part of its public outreach efforts, most professional staff at DGGS participated as officials in local science fairs at Fairbanks schools. Staff served as judges for the events; they also offered advice and natural resource information to the participants.

PROGRAM DEVELOPMENT

DGGS develops its strategic programs and project arrays through consultation with the many users of geological information—state and federal agencies, the federal congressional delegation, the state Legislature, the private sector, academia, and myriad Alaska citizens. Their input to DGGS programs comes through the Alaska Geologic Mapping Advisory Board (see page 6), the liaison activities of the Director, and personal contact between DGGS staff and the above groups.


FY98 PROJECTS
MINERAL APPRAISAL PROJECTS
1 Mentasta - Tetlin geologic map 2/3
2 Upper Chulitna geologic map 1/2
3 Talkeetna geologic map 2/2
4 Horn Mountains geologic map 1/2
ENERGY RESOURCE ASSESSMENT
1 Segment mid-Cook geologic map 1/1
2 Western Arctic oil provence 2/3
ENGINEERING GEOLOGY PROJECT
1 Anchorage earthquake hazards map 1/1
2 Belchatsk geotechnical database 1/2
3 Shishaldin and Westdahl volcanoes 1/1
4 Construction materials volumetric estimates 1/1
STATEWIDE
Alaska Geologic Information Database
1 Alaska's Mineral Industry
Land management hazards evaluation
Post-event hazards evaluation
Coal bed methane prospect selection
NCRDS coal resource summary
CIP
Airborne Geophysical/Geological Surveys
Iron Creek
Upper Copper/Upper Susitna
Northern Solomon
Rural Alaska Coal bed Methane
Light blue areas indicate State interest lands

FY98 DGGS PROGRAM FOR ALASKA

The FY98 DGGS program is focused primarily on projects designed to foster the creation of future Alaskan jobs and revenue. To maintain general prosperity, Alaska must foster major capital investment for job creation in the state. In the near future, much of the Alaska economy will continue to depend on developing the state's natural resources. Within that future, subsurface energy and mineral resources constitute the major portion of the state's wealth. DGGS provides much of the initial geologic data needed to catalyze and guide in-state geologic resource exploration and development ventures and provides a geologic framework for infrastructure development.

The Division of Geological and Geophysical Surveys has a strategic role in revenue generation and maintenance of Alaska's economy. DGGS provides objective geologic data and information used by in-state, national, and international mineral, energy, and construction companies; other DNR agencies, Department of Law, Department of Commerce and Economic Development, Department of Transportation, Department of Community and Regional Affairs, Division of Emergency Services, and the Federal Emergency Management Agency. DGGS geologist assist prospectors, mineral, oil, and gas explorationists, and others to explore for, discover, and develop Alaska's subsurface resources. DGGS is a central repository of Alaska geologic information and a primary source of information concerning geologic hazards (volcanic activity, coastal erosion, and earthquake hazards). To focus attention on Alaska's subsurface resource potential, DGGS makes the state's geologic information available on statewide, national, and international levels.

FY98 PROJECT DESCRIPTION OVERVIEW

PROJECT	GOAL	FUNDING
Statewide Mineral Resource Appraisal The Statewide Mineral Resource Appraisal project generates new geological and geophysical data useful for locating mineral deposits on state lands. This information commonly catalyzes significant private-sector investment leading to the creation of new jobs and the development of Alaska's mineral resources. Work is focused in accessible mining districts throughout Alaska.	Create new employment opportunities and foster the development of a more diversified state economy.	**636.7**
Energy Resource Appraisal The Energy Resource Appraisal project generates new geologic data useful for locating oil, gas, coal, or geothermal resources. Project work is regional and strategic in nature. It is designed to identify and provide an understanding of the geologic framework and potential energy producing geologic environments within Alaska.	Catalyze private-sector investment in revenue producing oil production and to locate energy resources useful for local heat and power generation in rural Alaska.	**481.9**
Geologic Materials Center The Geologic Materials Center (GMC), located in Eagle River, houses the state's only centralized repository of publicly available sample materials from Alaska's oil wells and mineral deposits. These samples are used by the geoscience public to generate and test new concepts that form the basis for full-scale oil, gas, or mineral exploration projects designed to find new deposits. The continued availability and use of these samples increases the private-sector's efficiency and probability of success in locating and developing Alaska's geologic resources.	Increase the efficiency and success ratio of private-sector projects aimed at developing Alaska's energy and mineral resources so that new jobs and revenues are created.	**78.2**

PROJECT	GOAL	FUNDING
Statewide Engineering Geology The Statewide Engineering Geology project focuses on generating data that are used to guide the engineering design of roads, railroads, bridges and other state infrastructure, and to assess potential geologic hazards whose effects can be mitigated through proper forward planning and engineering design.	Reduce personal and financial losses that can result from future natural geologic hazards events.	**248.9**
Construction Materials Resources The Construction Materials Resources project generates new data on the location and general characteristics of the state's construction materials.	Identify sources of sand, gravel, rip-rap, and other construction and industrial-mineral resources needed to support Alaska's economic growth and infrastructure development.	**142.4**
Geologic Maps and Reports The Geologic Maps and Reports project funds the compilation and summation of data and information generated within the division's technical projects and preserves it as unbiased peer-reviewed maps, reports, and computer-based databases.	Provide useful geologic information to all Alaskans in appropriate and efficient formats.	**186.9**
Director/State Geologist The Director's Office provides leadership and coordination for the activities of the division through the State Geologist/Director and Secretary. Funding for the Director's Office was deleted by the Legislature in FY96. Currently, the duties of the Division Director are being fulfilled by an Acting Director and State Geologist.	Provide strategic leadership for the Geological Development Component and act as liaison between the division and the DNR Commissioner's Office, other state agencies, and local, federal and private entities on issues affected by geological conditions.	**0.00**
Technical Support Services The Technical Support Services project provides financial control and technical support of all other division projects.	Facilitate implementation of the division's geologic resource and geologic hazards mitigation programs.	**208.7**
Priority Mineral and Energy Resource Development This project utilizes mathematical and computer-based geological data modeling techniques to identify high-priority mineral and energy tracts on Alaska state lands as a catalyst to private-sector exploration and development.	Create new high-quality jobs in rural Alaska and aid in diversifying the economy of the state.	**51.2**
Federal Receipts Project This project provides authorization to receive and expend funds acquired from federal grants and contracts.	Acquire federal funds to support long-term state geologic-resource inventory and geologic hazard mitigation objectives.	**360.4**

PROJECT	GOAL	FUNDING
Inter-Agency Receipts This project provides authority to receive and expend funds acquired from other state agencies.	Provide a mechanism to support DGGS participation in multi-agency projects in pursuit of state goals.	**101.7**
Program Receipts This project provides authorization to receive and expend funds acquired through gifts, grants, or reimbursement from the private sector.	Provide a mechanism to receive funds from the private sector to partially defray the costs of publishing DGGS maps and reports, or conduct investigations of particular interest to a group of sponsors.	**55.5**
Direct Charge CIP The Direct Charge CIP project contains the personal services funds necessary to implement the division's short-term CIP projects	Ensure that DGGS has available qualified staff to implement the state's high-priority minerals and energy Capital Improvement Projects that help create new jobs in the private sector, diversify the state's economy, and decrease cost of energy in rural Alaska.	**98.3**

FY98 PROJECT DETAIL

DIRECTOR/STATE GEOLOGIST

The Director's Office provides leadership and coordination for the activities of the division through the State Geologist/Director and Secretary. Funding for the Director's office was deleted by the Legislature in the FY96 General Fund budget. Currently, the duties of the Division Director are being fulfilled by an Acting Director and State Geologist.

Performance Objectives

1. Provide executive leadership for the Geological Development Component and act as liaison between the Division and the DNR Commissioner's Office, other State agencies, and local, federal, and private entities.
2. Stimulate discovery and development of the geologic resources of the state through support of detailed geologic and geophysical surveys.
3. Mitigate the adverse effects associated with natural geologic hazards.

Economic Returns

The Director's Office activities are critical to running an efficient geological development program. Through his/her leadership the State Geologist encourages the DGGS staff and cooperating federal, local, and private agencies to investigate and develop geologic programs to increase the amount of state land geologically investigated and mapped at scales useful for geological resource exploration, development and management.

STATEWIDE MINERAL APPRAISAL PROJECT

The decline of oil-generated revenues suggests that Alaska must move decisively to strengthen its subsurface resources economic base. To achieve this goal, Alaska needs private sector commitment of capital and talent in non-oil-related as well as oil-related industries. The mineral industry, however, will not commit major company resources or succeed on an acceptable timeline without dramatic advances in understanding the geologic environments of the most prospective Alaska lands open to mineral and other geologic resource development. Alaska has an accessible state land endowment of more than 100 million acres, much of it chosen from a 350 million acre land pool because of perceived potential to host mineral wealth. Currently the overwhelming majority of these lands are not geologically or geophysically surveyed at the detailed level or with the focus needed to optimize mineral discovery and development. Recently, a DNR/DGGS program of integrated geological and geophysical mapping has been effective in attracting new private-sector mineral investment capital to Alaska. The purpose of the FY98 Statewide Mineral Resource Appraisal Project is to produce, on a prioritized schedule, the critical new geological surveys needed to sustain Alaska's mineral industry investments and provide management agencies with information needed to formulate rational management policy.

Implementation of the numerous elements of the Statewide Mineral Resource Appraisal project are financed from a mixture of funding sources. General Fund, Capital Improvement Projects funding, Federal Receipts, and Program Receipts.

Performance Objectives

1. Catalyze increased mineral resource exploration in the Rampart-Manley-Tofty, Tolstoi, Upper Chulitna and Petersville-Collinsville mining districts within the next three years.
2. Provide DNR, other state agencies, and the public with unbiased, authoritative information on the mineral resources of the state so that rational land policy and investment decisions can be made.
3. Provide an accurate current statistical and descriptive summary of the status of Alaska's mineral industry for the period of calendar year 1996.

Performance Measures

Project tasks and products financed by FY98 General Funds, CIP funds, Program Receipt funds and Federal Receipt funds:

1. The publication of the final comprehensive geologic maps and ground-truth geologic data from the Tanana B-1 quadrangle in the Manley-Rampart-Tofty district generated in FY96 and early FY97. These data will be released in a summary report and as a series of 1:63,360-scale bedrock- and surficial-geologic maps and as generalized 1:63,360-scale geologic-materials maps.
2. The conduct of geologic ground-truth field surveys of the Tanana A-1 and A-2 quadrangle portion of the Rampart-Manley-Tofty mining districts and publication of the data collected as interim geologic maps at a scale of 1:63,360.
3. The compilation and publication of comprehensive geological survey data collected for bedrock and surficial geological units in the Tolstoi mining district during the summer of 1996. These data will be released as a final geologic map at 1:63,360 scale.
4. The compilation and publication of previously collected geologic data for the Horn Mountain region in southwestern Alaska. These data will be released in the form of a comprehensive geologic map at 1:63,360 scale.
5. The conduct of follow-up ground-truth geologic field observations in the upper Chulitna mining district and compilation of an interim comprehensive geologic map from data gathered during the summer of 1997. These data will be released as a summary report and as a series of 1:63,360-scale bedrock and surficial geologic maps and as a generalized geologic-materials map useful in construction design and planning.
6. The computerized geo-referencing of all existing Alaska Division of Geological and Geophysical Surveys publications in an Internet database so that persons anywhere in Alaska can determine what State-generated geologic data is available for any part of the state by highlighting the geographic area of interest on a computer screen.
7. The preparation and publication of DGGS's annual report on mineral industry activity in Alaska, *Alaska's Mineral Industry*.

STATEWIDE ENERGY RESOURCE ASSESSMENT PROJECT

The Statewide Energy Resource Assessment project produces new geologic information about the state's oil, gas, and coal resources. Currently oil-generated revenue, while still the largest contributor to the state's economy, is declining. This project, therefore, focuses significant effort on geologic studies to identify new areas capable of hosting major oil and gas discoveries. Recently, DGGS work has been directed towards the largely unexplored western North Slope Basin. A better understanding of the oil-related geologic parameters in this potentially major oil province is critical to the state's desire to maintain a strong in-state oil industry. The quality and extent of publicly available geologic mapping for this region, however, is not currently adequate to delineate good prospective areas much beyond the vicinity of Prudhoe Bay. New information is especially important to attract new major exploration investments to the state.

The cost of heating and power generation in rural Alaska also has been a perennial concern that is growing more acute as revenues from the oil industry decline. The impact of power generation costs on the state's annual budget can be decreased if economically viable local sources of alternative energy can be located near rural villages and towns. In FY98, DGGS will continue to address a solution to this problem through its Statewide Energy resource assessment project. FY98 work will concentrate on evaluating interior basins of Alaska with respect to the possibility of locating natural gas or coalbed methane energy sources for local consumption and on assessing the oil and gas potential of the western Arctic plain of Alaska. In addition, DGGS will also compile and summarize (at 1:250,000 scale) data generated from previous field investigations conducted in the Sagavanirktok Quadrangle.

The Statewide Energy Resource Assessment Project also participates in the division-wide task of implementing a comprehensive on-line computerized geologic reference database of Alaska for the public.

The numerous elements of the Statewide Energy Resource Assessment Project are financed from a mixture of funding sources: General Fund, Program Receipts, Federal Receipts, and Capital Improvements Projects funding.

Performance Objectives

1. Catalyze the beginning of active private-sector exploration of the western Arctic oil province within the next three years.
2. Investigate the feasibility of lowering the cost of heat and power generation in rural Alaska by drill testing at least one potential coalbed methane source area for local-market commercial production.
3. Provide DNR, other state agencies, and the public with authoritative information relating to the energy resources of the state so that rational policy and investment decisions can be made.

Performance Measures

Project tasks and products financed by the General Fund operating budget, Program Receipts, and Federal Receipts in FY97 are:

1. The production of a series of maps at the appropriate scale that delineate the surface exposures and project the subsurface extent of possible oil reservoir sands and source rocks in Alaska's undeveloped western Arctic oil province.
2. The production of a summary report of structural, stratigraphic, paleontologic, petrographic, and geochemical data pertinent to evaluating the oil potential of possible oil source- and reservoir-rocks in the undeveloped western Arctic oil province.
3. The completion of the initial drill-test phase of a multi-year project to identify specific sources of energy suitable for local production and consumption, and compilation of a report outlining those areas of the state most likely to have alternative energy resources that can be used for power generation in rural towns and villages of western Alaska.
4. Compile geologic data for the Sagavanirktok Quadrangle in the form of a regional 1;250,000 scale bedrock geologic map.
5. Expansion of the state's computer-hosted coal resource database for the smaller interior basins of Alaska and the production of a summary report of the data available for these basins.
6. The computerized geo-referencing of all existing DGGS maps and reports in an on-line database so that persons can determine what state geologic data is available for any part of the state by highlighting the geographic area of interest on a computer screen, accessed on the Internet.

GEOLOGIC MATERIALS CENTER PROJECT

The Geologic Materials Center (GMC) archives and provides public access to non-proprietary oil and gas cores and drill-cutting samples, rock cores from mineral industry sources, and processed ore, oil, gas, and coal host- and source-rock samples. These samples are used by government and private-sector geoscientists to improve the odds of finding new oil, gas, and mineral deposits that would maintain the flow of state revenues and provide in-state employment. The Geologic Materials Center Project is financed from the General Fund budget and approximately $150,000 of in-kind contributions directly from industry. The private sector contributes the cost of delivering all new samples, sample preparation and analyses, sample logs, and data logs. The holdings of the GMC are a continually growing asset that is compounding in value over time at little cost to the state. The GMC facility is staffed by one division geologist and numerous private-sector volunteers. The GMC has formal cooperative agreements with the U. S. Geological Survey, the U. S. Minerals Management Service and U. S. Bureau of Land Management to house and control their Alaska geologic materials. There is a voluntary 14-member Board that advises the GMC project leader and DGGS on matters pertaining to the GMC.

Performance Objectives

1. Enhance oil revenues and in-state employment opportunities by making oil, gas, and mineral exploration more effective.
2. Advance the knowledge of the geology and resources in Alaska's low-lying structural basins favorable for oil discovery and various kinds of mineral deposits in Alaska's highlands favorable for minerals.

Performance Measures

Project tasks and products funded by the General Fund operating budget in FY96:

1. The GMC will receive, archive and maintain cores, cuttings, and processed samples within a system that provides ready access to the general public, government, and industry while preserving the long-term integrity of the sample and core collection.

STATEWIDE ENGINEERING GEOLOGY PROJECT

The Statewide Engineering Geology Project addresses major engineering-geology and geologic-hazards issues that affect public safety and economic well-being in developing areas of Alaska. DGGS conducts engineering geologic mapping showing distribution and character of surficial deposits, their suitability for foundations, susceptibility to erosion, earthquakes and landslides, and other geologic hazards. Geologic evaluations of areas subject to major hazards like floods, earthquakes, volcanic eruptions, and landslides help predict the likelihood of future major events, the severity of hazards associated with them, and suggests alternatives to avoid or reduce the effect of these hazards. In addition to General Funds, several elements of the Statewide Engineering Geology Project are partially or largely financed from Federal Receipts or Program Receipts.

Performance Objectives

1. Protect health and public safety by providing information on geologic hazards as they affect human activity.
2. Lower the costs of construction design and improve the prior planning to mitigate consequences arising from natural geologic hazardous events and conditions.
3. Allow informed land-use decisions by the government and private sector.

Performance Measures

Project tasks and products funded by General Fund, Federal Receipts, or Program receipts moneys in FY97 are:

1. The production of written evaluations of potential hazards in areas of oil exploration leases, land disposals, permit applications, etc. (estimated 20-30 formal responses).
2. The conduct of post-event hazard evaluations in response to unexpected major geologic events (e.g., evaluation of post-earthquake ground failure and landslide potential or post volcanic eruption flood and debris-flow potential).
3. The production of earthquake-hazard maps for the Anchorage area.
4. Collect and collate subsurface data on surficial geologic units, geologic construction materials, depth to bedrock, and water level conditions in the greater Fairbanks area in a geo-referenced geotechnical-data database.
5. The production of a volcanic hazards map of Shishaldin and Westdahl volcanoes in cooperation with the other interagency members of the Alaska Volcano Observatory (AVO).
6. Coordinate the federally-funded upgrading of existing volcano monitoring instrumentation and the installation of new instrumentation at four additional volcanoes in the Central Aleutian Islands in cooperation with the other interagency members of the Alaska Volcano Observatory (AVO).

CONSTRUCTION MATERIALS RESOURCES PROJECT

The Construction Materials project provides information on the rip-rap, sand, and gravel construction materials needed for private and public-infrastructure construction. The information provided by this project expedites the design and planning phases of state and private construction projects and helps control the cost of those projects for which this information is available. Sources of construction materials are of special concern in much of rural Alaska where coarse rip-rap is needed for erosion control near towns and villages, and gravel is needed for local and regional roads. Over the past decade, annual state revenues from the sale of sand, gravel, and stone products have been second only to revenues generated from the sale of petroleum resources. During FY98 this project will focus on mapping materials resources in areas of interior and south-central Alaska, previously selected for geophysical mapping, to support the expansion of the state's mineral industry.

Implementation of the FY98 Statewide Construction Materials project outlined below is supported by the General Fund operating budget.

Performance Objectives

1. By June FY98, identify sources of sand, gravel, rip-rap, and other geologic construction materials needed to create the infrastructure and roads or other land-based transportation corridor improvements required to support the expanded development of the Rampart-Manley-Tofty area, and the upper Chulitna mining district.
2. Design a cost-efficient and effective way of using modern technology in conjunction with conventional ground-truth methods to delineate construction materials resources and make volumetric estimates of aggregate deposits available for extraction in the vicinity of growing municipalities.

Performance Measures

Project tasks and products financed by the General fund operating budget in FY98 are:

1. Complete a 1:63,360-scale surficial geology and terrain-unit analysis map summarizing the location of construction materials (sand, gravel, and rip- rap) in the Tanana A-1 and A-2 quadrangles of the Rampart-Manley-Tofty mining district.

2. Complete an interim 1:63,360-scale surficial geology and terrain-unit analysis map summarizing the location of construction materials in the upper Chulitna mining district.
3. Completion of the first year of a two-year project to prepare 1:63,360-scale surficial geology and construction materials resources maps in the Petersville mining district .
4. Design a cost-efficient and effective way of using modern technology in conjunction with conventional ground-truth methods to delineate construction materials resources and make volumetric estimates of aggregate deposits available for extraction in the vicinity of growing municipalities.
5. The computerized geo-referencing of all existing Alaska geologic mapping in a database so that persons can determine what geologic mapping is available for any part of the state by highlighting the geographic area of interest on a computer screen.

GEOLOGIC MAPS AND REPORTS PROJECT

The Geologic Maps and Reports Project edits, publishes, and disseminates technical and summary reports and maps on Alaska's geologic resources that are generated by the Division's technical projects. The maps and reports released through this project are the primary vehicle the state has for widely disseminating factual information and data relating to its subsurface mineral and energy wealth and its environmental geology. These documents focus attention on Alaska's most prospective lands and are the authoritative basis for many of the state's resource-related land policy decisions. They also stimulate geologic exploration investment leading to resource discoveries and subsequent major capital investments. Timely availability of information derived from DGGS geological surveys is a significant activity for creating a more sustainable economy to offset the decline in Prudhoe Bay oil production. This project will begin extensive use of the Internet in FY98 to enhance the timely disbursement of the Division's information and to provide state and worldwide access to the Division's geologic information base.
The Geologic Maps and Reports Project is financed through the General Fund and Program Receipts.

Performance Objectives

1. Disseminate new, accurate, unbiased, division-generated data on the geology of Alaska to the public at large, to interested DNR policy and regulatory groups and to all other interested parties within one year of its acquisition.
2. Preserve the data and knowledge generated by the division's special and ongoing projects in an organized, readily retrievable, and reproducible form consistent with pertinent professional standards.
3. Focus public awareness on Alaska's most prospective mineral and energy lands.

Performance Measures

Project tasks and products funded by General Fund and Program receipt moneys are:

1. Publish and distribute an annual report on Alaska's mineral industry.
2. Publish five new digital maps of the geology and natural resources of the state of Alaska.
3. Distribute 12,000 or more copies of new or previously published maps and publications.
4. Distribute new, accurate, unbiased information on the geology and natural resources of the state of Alaska within one year of data acquisition.
5. Post comprehensive database of Alaskan geology on Internet within three years.
6. Post user-friendly index of DGGS publications on Internet within one year.
7. Provide digital "value-added" geologic data products as requested.
8. Create five user-friendly fact sheets on geologic features of interest and use to a broad spectrum of Alaskans.
9. Publish a quarterly newsletter of Alaskan geology to keep the public informed about DGGS projects and products.

10. Create and archival record documenting the factual database and procedure for reproducing each digital map published.

TECHNICAL SUPPORT PROJECT

This project provides financial control and technical support for all other projects in the Geological Development component including: securing lowest costs for goods and services; maintaining, and when necessary, procuring vehicles for field work; coordinating travel arrangements and appropriate paperwork to minimize travel expenses and field party subsistence costs; negotiating the helicopter contract; administering and monitoring grants and contracts; tracking and reporting project expenditures to ensure cost containment within budget for all projects; mail/courier services; assistance in personnel matters; petty cash; receptionist support; coordination of public inquiries for maps, reports, and other information; computer assistance; and any other support necessary to further increased efficiency or savings in acquiring knowledge of the geology of Alaska.

Objectives

1. Monitor grants and contracts (Federal, Interagency, and Program Receipts) to ensure deliverables are produced on schedule and within budget; ensure expenses are properly billed against grants and contracts and receipts are collected promptly.
2. Provide accurate, timely reporting of project expenditures and current balances; encourage prudent money management.
3. Coordinate and direct public inquiries. Put geologic information in the hands of exploration companies and other resource developers and investors.
4. Decrease the cost of transportation to the field by coordinating personnel travel and supply shipments; negotiate long-term helicopter contracts in cases where helicopters are necessary; coordinate division vehicle use and decrease requests for reimbursement for personal vehicle mileage.
5. Make travel arrangements and complete travel authorizations to ensure the use of the lowest cost travel options.
6. Provide communication between remote field camps and office, allowing for unforeseen circumstances, expediting field supplies, and personnel safety.
7. Expedite mail/courier service to send geologic samples to various laboratories for special analysis, to send and receive correspondence related to geologic projects.
8. Assist staff with personnel matters; file paperwork to hire, terminate, reprimand, commend, or lay off personnel as necessary to fulfill the mission of the division; keep staff informed about changes in personnel rules or benefits and ensure that all personnel paperwork complies with applicable rules and regulations. Project personnel salaries and benefits to assist management in making human resource decisions necessary to efficiently produce the greatest amount of resource information.
9. Maintain a petty cash fund to allow staff to use most expedient means to purchase the tools they need to produce a useful product in a timely manner.

Performance Measures

1. Number of field vehicles available; decreased number of requests for personal vehicle reimbursement.
2. No travel rule violations; travel paperwork filed in timely manner.
3. Helicopter contracts in place before field season; more samples collected; more accurate maps produced; lower seasonal cost.
4. Contract deliverables produced on schedule, within budget; expenses properly billed; receipts collected promptly. New cooperative agreements offered and accepted.
5. Project chiefs know account balances at all times; no accounts overspent.

6. Personnel matters including hire, termination, reprimand, commendation, or layoff paperwork filed accurately and on time.
7. Telephone calls answered and responses made regarding geologic resource information.

PRIORITY MINERAL AND ENERGY RESOURCE DEVELOPMENT PROJECT

The Priority Mineral and Energy Resource Development Project aids in the identification of mineral, energy, or construction material resources statewide on a priority basis. In FY98, DGGS will continue addressing the high priority that the Department of Natural Resources and Alaska citizens place on decreasing the time and expense of assembling geologic data pertinent to the location of valuable geologic resources. The division is continuing the development of a computerized on-line geo-referenced geologic database for the state of Alaska. This project is designed to bring one or more complete subsets of geologic data or reference information into the database each year until the project is complete. Because of the magnitude of this task, and limited resources, the project was originally planned for five years. However, through a series of formal and informal cooperative agreements with other resource agencies, we now hope to have this project completed within the next two years. Useable products will be produced each year of the project.

Objectives

1. Decrease the time needed for assembling publicly available references to geoscientific data pertinent to virtually any geologically-related issue in Alaska to no more than one hour by the year of 1999.

Performance Measures

Project tasks and products financed by the General Fund operating budget in FY98 are:

1. The computerized geo-referencing of all published Alaska Division of Geological and Geophysical Surveys geologic maps, reports and data in a database so that persons can determine what DGGS-generated geologic information is available for any part of the state by highlighting the geographic area of interest on a computer map display.

FEDERAL RECEIPTS PROJECT

The Federal Receipts Project allocates funds received from federal agencies for cooperative or matching fund projects such as investigations of mineral and materials resources, energy resource investigations, and geologic hazard assessments. All these projects increase information on Alaska's geologic resource base or the geologic engineering parameters of natural conditions affecting development activities and public safety. Most projects are unique single- or multi-year projects that are implemented as funds are available from cooperating federal agencies.

Objectives

1. Maximize the return on Alaska General Fund moneys expended to meet the mandate of AS 41.08.020 through federal grant and cooperative project funding support of Alaska's geologic survey priorities.
2. Conduct geological and geophysical surveys to determine the potential of Alaskan land for the production of metals, minerals, and fuels.

3. Determine the potential geologic hazards to buildings, roads, bridges, and commerce from earthquakes, and volcanic eruptions.
4. Conduct other surveys and investigations that will advance the knowledge of the geology of Alaska.

Performance Measures

Project tasks financed in part by Federal Receipt funds in FY98 are:

1. Bedrock and surficial geologic maps of the Tanana A-1 and A-2 quadrangles (implemented as elements within the Statewide Mineral Appraisal and Statewide Construction Materials Projects.
2. Compilation of the oil-related geology in the Sagavanirktok quadrangle (implemented as elements within the Statewide Energy Resource Assessment Project).
3. Small coal field and interior basin coal resource database (implemented within the Statewide Energy Resource Assessment Project).
4. Alaska Volcano Observatory supported geologic hazards maps of Shishaldin and Westdahl Islands (implemented as an element within the Statewide Engineering Geology Project).
5. Alaska Volcano Observatory supported upgrade and deployment of new volcano monitoring instrumentation on four Alaska volcanoes (implemented as an element within the Statewide Engineering Geology Project).

INTERAGENCY RECEIPTS PROJECT

This project allocates funds received from other State agencies for cooperative projects such as investigations of mineral and materials resources, energy- resource investigations, and geologic hazard assessments. All of these projects increase information on Alaska's geologic resource base, and/or the geologic engineering parameters of natural conditions affecting development activities. Most projects are one-time single- or multi-year projects that are awarded as information or studies are needed from cooperating State agencies. We do not normally know in advance which projects, if any, will be funded during the forthcoming budget year. Historically, however, the level of interagency receipts authorization requested here will cover cooperative projects.

PROGRAM RECEIPTS PROJECT

This project allocates funds received from local governments, private industry, and the general public from sale of publications, cooperative or matching fund projects such as investigations of mineral and materials resources, energy resource investigations, and geologic hazard assessments. All of these projects increase information on Alaska's geologic resource base, or the geologic engineering parameters of natural conditions affecting development activities. Most elements are one-time single- or multi-year tasks that are undertaken as funds are available from cooperating agencies. We do not normally know in advance which projects, if any, will be funded during the forthcoming budget year.

Objectives

1. Maximize results from General Fund and CIP moneys through non-governmental program receipts to meet the mandate of Alaska Statute 41.08.020.
2. Provide for the timely release of mineral-, energy-, and geologic construction materials-related geologic data that will focus attention on Alaska lands having the most promising potential to sustain or diversify Alaska's economy, or on those lands having a critical impact on Alaska citizens.

Performance Measures

Project tasks and products financed in part by Program Receipts:

1. Publish interim surficial and bedrock geology map of the Tanana A-1 and A-2 quadrangle in the Manley-Tofty-Rampart mining district (implemented within the Statewide Mineral Resource Appraisal Project and Statewide Construction Materials Project).
2. Publish an updated surficial and bedrock geological map of the Tanana B-1 quadrangle portion of the Rampart-Manley-Tofty mining (implemented within the Statewide Mineral Resource Appraisal Project and Statewide Construction Materials Project).
3. Publish an interim surficial- and bedrock-geologic map of the upper Chulitna mining district (implemented within the Statewide Mineral Resource Appraisal Project).
4. Publish a series of preliminary maps at the appropriate scale that delineate the surface exposures and project the subsurface extent of possible oil reservoir sands and source rocks in Alaska's undeveloped western Arctic oil province (implemented within the Statewide Energy Resource Assessment Project).
5. Publish a summary report of structural, stratigraphic, paleontologic, petrographic, and geochemical data pertinent to evaluating the oil potential of possible source-and reservoir-rocks in the undeveloped western Arctic oil province (implemented within the Statewide Energy Resource Assessment Project).
6. Publish a report and map outlining those areas of Alaska most likely to have alternative coalbed-methane energy resources suitable for local power generation (implemented within the Statewide Energy Resource Appraisal Project).
7. Publish an updated and expanded surficial geology and volcanic hazards map and cross-sections for the greater Anchorage area (implemented within the Statewide Engineering Geology Project).
8. Publish a volcanic hazards map of Shishaldin and Westdahl Islands, Alaska (implemented within the Statewide Engineering Geology Project).
9. Publish 1:63,360-scale surficial geology and terrain-unit analysis maps summarizing the location of construction materials (sand, gravel, and rip-rap) in the Tanana A-1 and A-2 quadrangles (implemented within the Construction Materials Resources Project).

APPENDIX

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS
FY97 Budget

GENERAL FUND

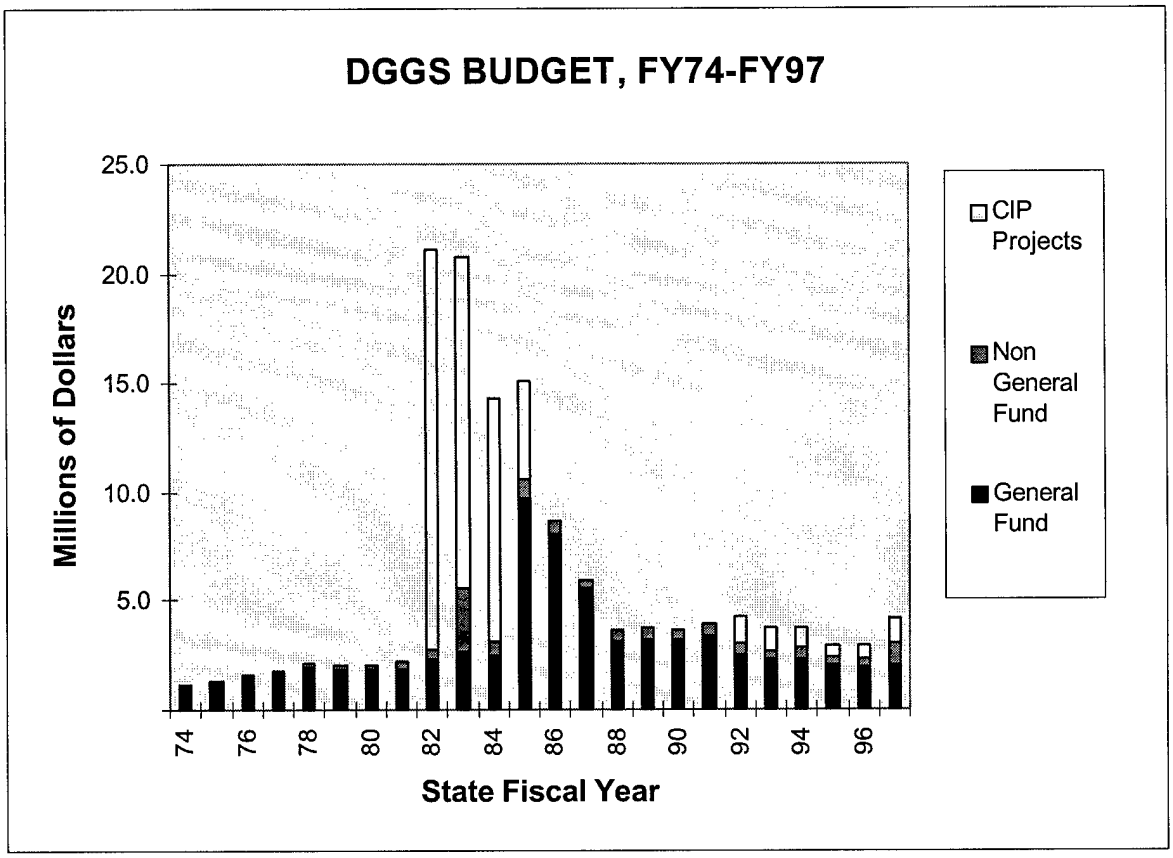
SECTION	PROJECT	FY97	TOTALS
Minerals and Energy Resources			
	• Statewide Mineral Resource Appraisal	607.0	
	• Statewide Energy Resource Assessment	481.9	
	• Geologic Materials Center	78.2	
	• Priority Mineral and Energy Resource Development	51.2	
			1218.3
Engineering Geology			
	• Statewide Engineering Geology	248.9	
	• Construction Materials Resources	142.4	
			391.3
Geologic Communications		186.9	**186.9**
Director's Office		0	**0**
Technical Support Services		211.3	**211.3**
TOTAL GENERAL FUND			**2007.8**

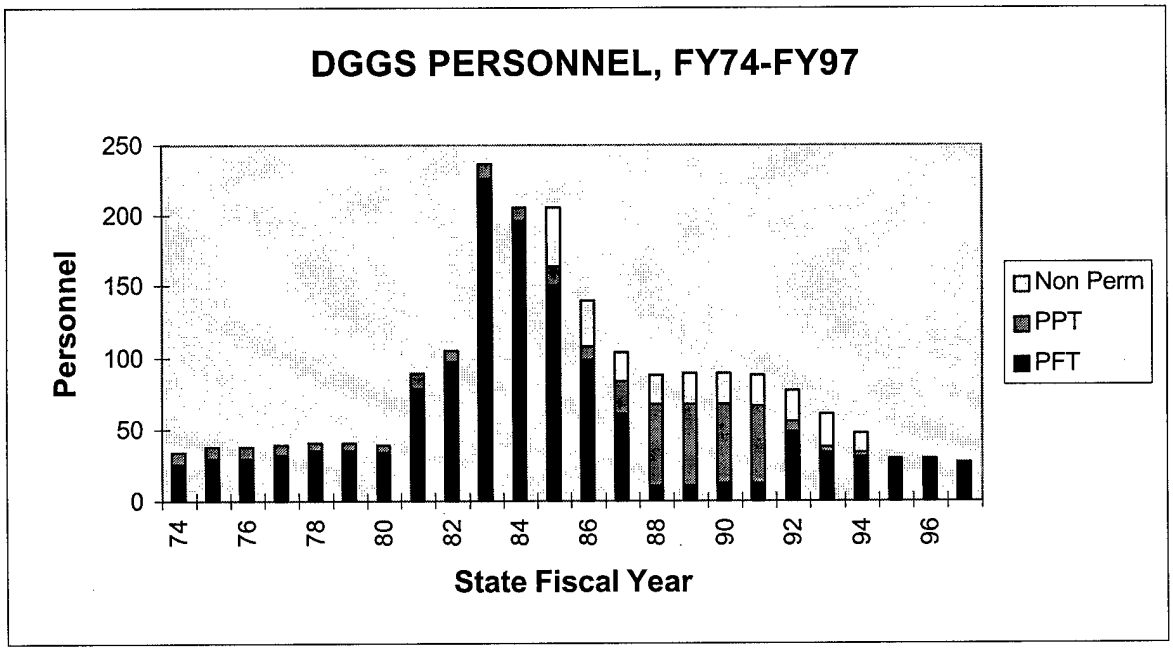
CAPITAL IMPROVEMENT PROJECTS

• Geophysical/Geological Mineral Inventory	**400.0**
• Geophysical Survey of Southwestern Alaska	**200.0**
• Coalbed Methane	**400.0**

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS
Summary of Budget History
FY85-FY97
General Fund

REMAINING DGGS ALLOCATIONS	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97
Mineral Resource Appraisal	2039.9	1687.6	1022.0	808.2	808.2	715.3	853.0	768.7	614.5	685.3	633.3	720.4	658.2
Energy Resource Appraisal	0	0	0	421.0	421.0	599.6	535.8	507.8	531.9	549.0	551.9	541.4	560.1
Resource Information/ Engineering Geology	1940.3	1158.0	878.6	775.5	775.5	678.3	665.7	698.3	728.3	710.3	569.2	479.8	578.2
Water Resources	1254.6	1120.5	815.2	599.7	599.7	611.1	763.2						
Administrative Services	1532.2	1201.6	766.9	466.2	575.7	543.1	535.7	514.2	458.1	358.2	284.4	219.5	211.3
TOTAL	**6767.0**	**5167.7**	**3482.7**	**3070.6**	**3180.1**	**3147.4**	**3353.4**	**2489.0**	**2332.8**	**2302.8**	**2038.8**	**1961.1**	**2007.8**
TRANSFERRED PROJECTS AND APPROPRIATIONS													
Water Resources (to Division of Water)								739.4					
Cadastral Survey (to Land and Water)	644.3	574.1	337.7										
Archaeological Survey (to Parks)	188.2	205.8	212.5										
Energy Resources (to Oil and Gas)	1708.1	1790.8	1444.5										
Seismic Engineering (to Oil and Gas)	408.6	258.5	131.5										
TOTAL	**9716.2**	**7996.9**	**5608.9**	**3070.6**	**3180.1**	**3147.4**	**3353.4**	**3190.5**	**2332.8**	**2450.8**	**2038.8**	**1961.1**	**2007.8**


DGGS BUDGET, FY74-FY97
Millions of Dollars
25.0
20.0
15.0
10.0
5.0
74
76
78
80
82
84
86
88
90
92
94
96
State Fiscal Year
CIP Projects
Non General Fund
General Fund


DGGS PERSONNEL, FY74-FY97
Personnel
250
200
150
100
50
0
74
76
78
80
82
84
86
88
90
92
94
96
State Fiscal Year
Non Perm
PPT
PFT

INTERNET DOCUMENT INFORMATION FORM

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Department of Natural Resources
Division of Geological & Geophysical Surveys
794 University Avenue, Suite 200
Fairbanks, AK 99709-3645
(907) 451-5010

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